

SEE brought to you by **etap**

Electrical CAD Brochure

SEE Electrical

Software for *Electrical Engineering*

A complete software range for **electrical engineering**



System Design



Electrical Design &
Engineering



Data and Project Management



Ecosystem Integration



Simulation & Diagnostic



Electrical Manufacturing





SEE Electrical

Software for Electrical Engineering



전력계통 설계 및 해석, 전력 시스템 운영 및 최적화 솔루션을 제공하는 혁신적인 플랫폼입니다.

The leading sustainable enterprise platform for electrical design, simulation, engineering, and operations.

ETAP은 전기 시스템 설계, 분석, 운영 및 유지보수가 가능한 포괄적인 소프트웨어로 디지털 트윈 플랫폼을 활용한 솔루션을 제공하고 있습니다.

ETAP의 핵심원칙



안전성 | Safety

전력 시스템의 시뮬레이션 분석을 통해 잠재적인 위험을 예방하고 국제 표준을 준수합니다.



지속성 | Sustainability

전력 시스템의 라이프사이클 전반에 걸친 친환경적이고 합리적인 의사결정을 내릴 수 있도록 지원합니다.



신뢰성 | Reliability

정확한 정보를 기반으로 신뢰성 높은 결과를 제공하여 엔지니어는 설계에서 운영에 이르기까지 모든 과정에서 합리적인 의사결정을 내릴 수 있게 합니다.



복원성 | Resilience

복잡한 전력 시스템의 오류를 효율적으로 찾아 복원할 수 있으며, 전력 계통 운영의 안정성을 확보합니다.



효율성 | Efficiency

전력 시스템의 설계 및 분석 프로세스를 효과적으로 간소화하여 엔지니어링의 효율성을 향상시킵니다.

Supporting a diverse range of **business sectors**

across the global energy landscape



발전 | Generation



송전 | Transmission



신재생 | Renewable



교통수단 | Transportation



데이터센터 | Data Centers



산업 | Industrial



상업시설 | Commercial



배전 | Distribution

SEE Electrical

Intuitive electrical CAD software for electrical professionals

SEE Electrical은 2D/3D 전기 설계에 최적화된 CAD 소프트웨어로 전기설계, 엔지니어링 및 문서 표준화를 위한 다기능 엔지니어링 소프트웨어 패키지입니다

Customer challenges

- Lack of documentation and access to as-built drawings
- Minimizing errors while ensuring compliance and safety
- Time wasted on repetitive manual
- Customization for each project
- Collaboration across project stakeholders
- Cost constraints, lead time pressure, and accurate estimation

Benefits

Improved Documentation & Reporting

- Generate detailed documentation, including wiring diagrams, schematics, and bill of materials (BOMs) ensure quick reference to critical information.

Improved Design Efficiency

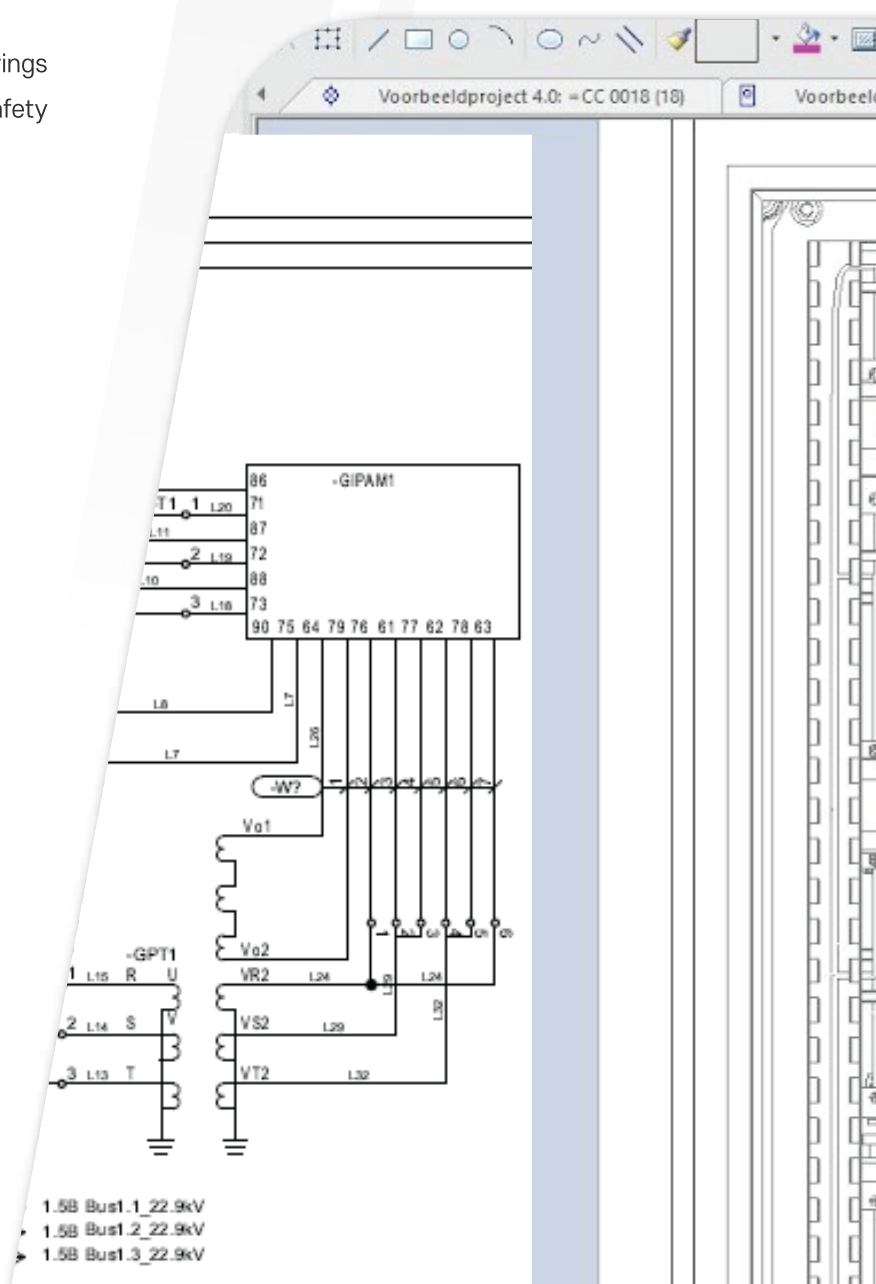
- Advanced design and drafting tools, automated repetitive tasks, libraries of symbols and components to streamline design.

Improved Safety & Compliance

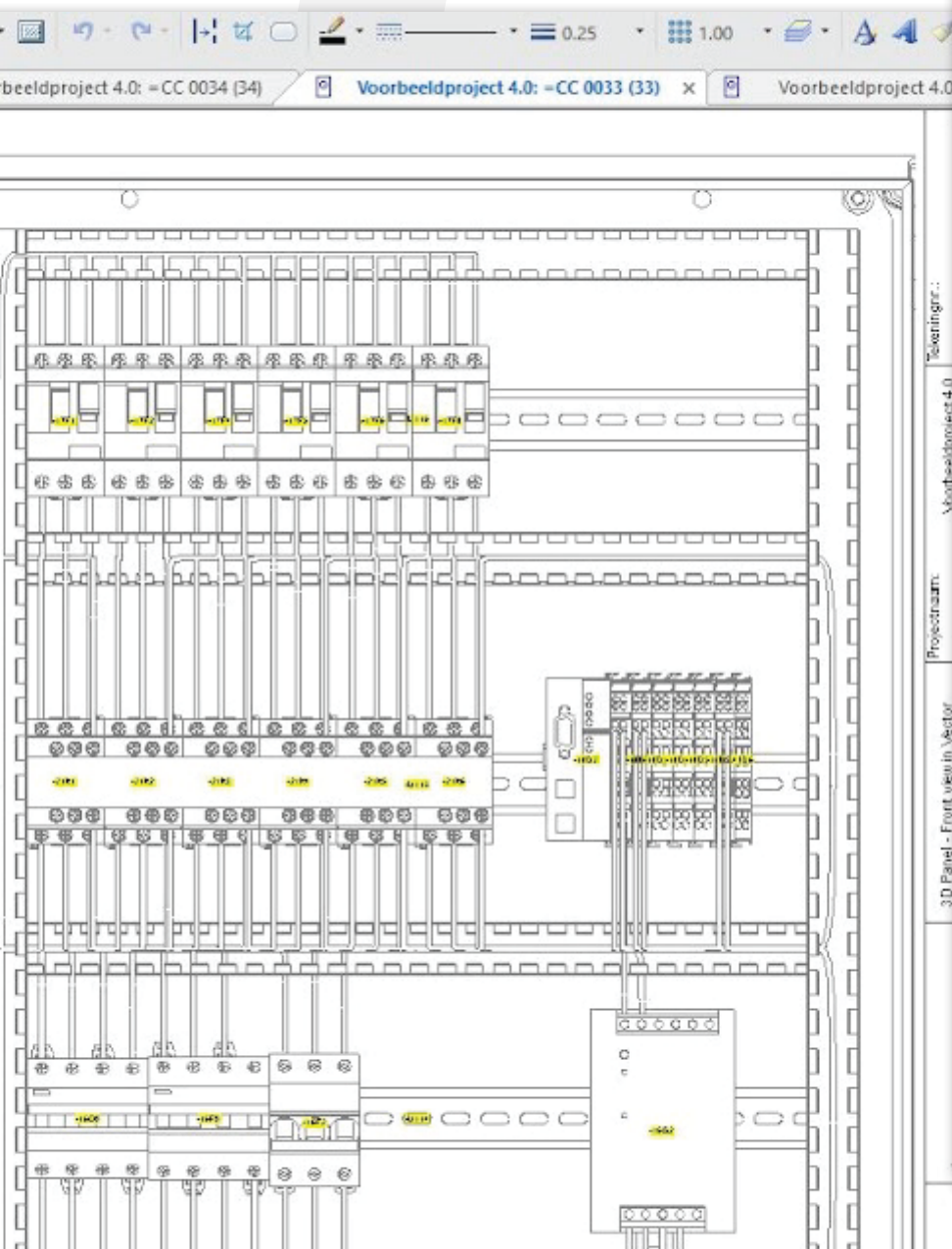
- Electrical systems are designed and documented with industry standards reducing errors and simplifying compliance.

Improved Collaboration

- Easily generate your completed documentation, seamlessly collaborate with co-workers and business partners.



Available Add-Ons For Your Unique Needs



3D Panel Design

3D 엔지니어링 도구를 제공하여 제어 판넬, 배전반 등 3D 설계가 가능한 환경을 제공합니다.

(Launch, Grow, Scale에서 사용 가능 & Add one or Stand-alone 선택)

3D Panel Manufacturing

3D Panel Design을 포함하며, 현장 작업자를 위한 다양한 문서를 제공하며, 3D 설계 및 제조를 위한 최적의 도구(Tools)를 제공합니다.

(Launch, Grow, Scale에서 사용 가능 & Add one or Stand-alone 선택)

Building Implantation

평면도에 전기 장비를 삽입하고 자동으로 단선도(SLD)를 생성할 수 있으며, 건물 평면도 설계, 심볼 제공, 케이블 디자인, B.O.M. (Bill Of Materials)을 제공합니다.

Auto-Diagram Generation

Excel/Access 데이터를 사용하여 자동으로 회로도를 생성할 수 있습니다.

Translation

프로젝트를 여러 언어로 빠르게 번역할 수 있습니다. / 영어, 독일어, 이탈리아어, 스페인어 등 (Launch, Grow, Scale에서 사용 가능)

SEE Web Catalog

1,800개 이상의 글로벌 제조사에서 제공하는 백만개 이상의 장비 데이터를 제공, 이중 3D 기호가 포함된 데이터가 81,000개이며, 최신 데이터로 신속하게 업데이트되는 온라인 카탈로그입니다. (Grow, Scale에서 사용 가능)



SEE Electrical

Software for Electrical Engineering

SEE Electrical EXPERT

Easy to use software for improved efficiency, improved productivity, and improved collaboration.

SEE Electrical Expert는 산업용 시스템을 위한 최고 수준의 CAD 소프트웨어로 2D/3D 전기 설계와 제조를 위한 하네스(Harness)설계 같은 고급 기능이 포함된 종합 엔지니어링 소프트웨어 패키지입니다.

Customer challenges

- Lack of documentation available on demand
- Time wasted on repetitive tasks and creating documentation
- Code compliance and safety regulations
- Difficulty communicating across the project lifecycle and loss of data
- Lack of customization and manufacturers catalogs

Benefits

Improved Efficiency:

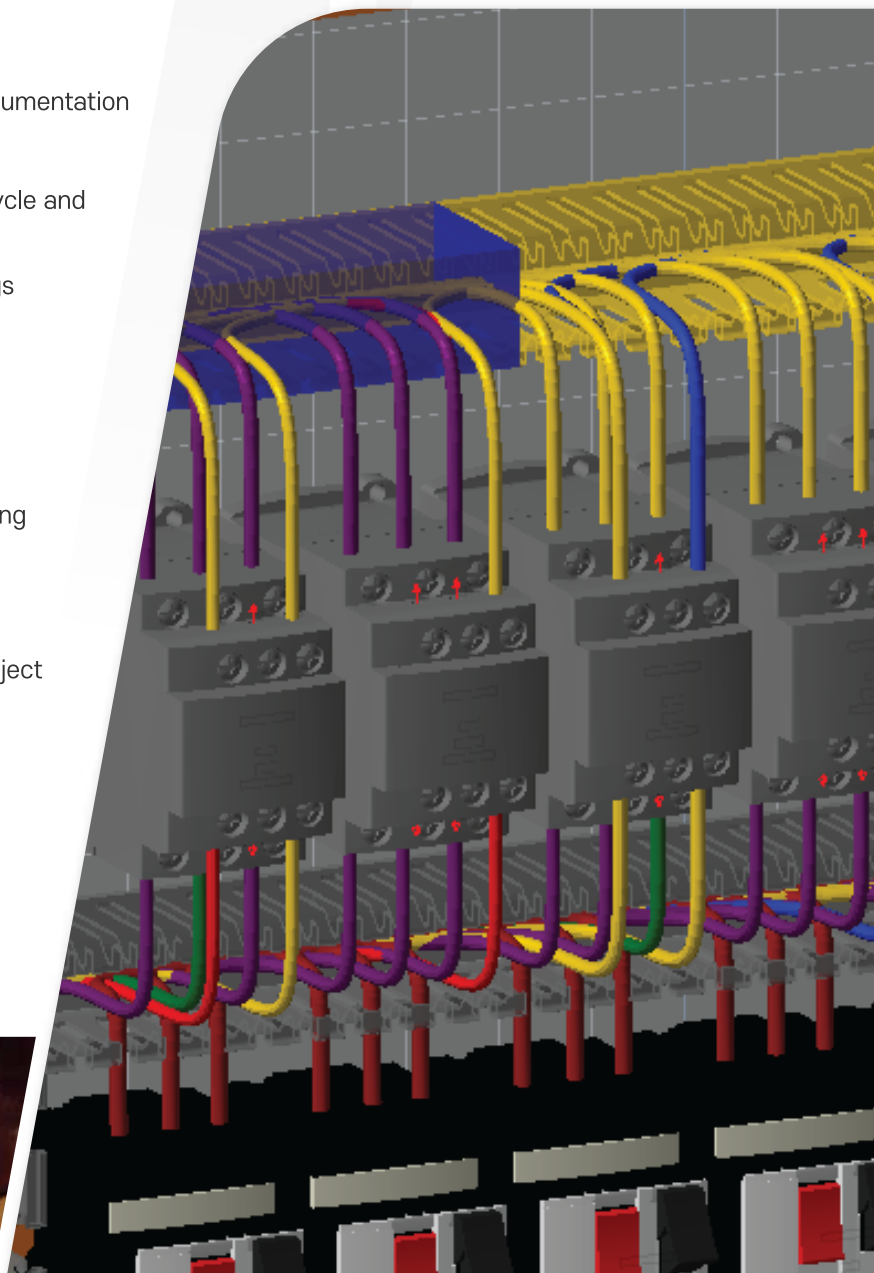
- Streamlining the electrical design process, reducing errors, and saving time.

Improved Productivity:

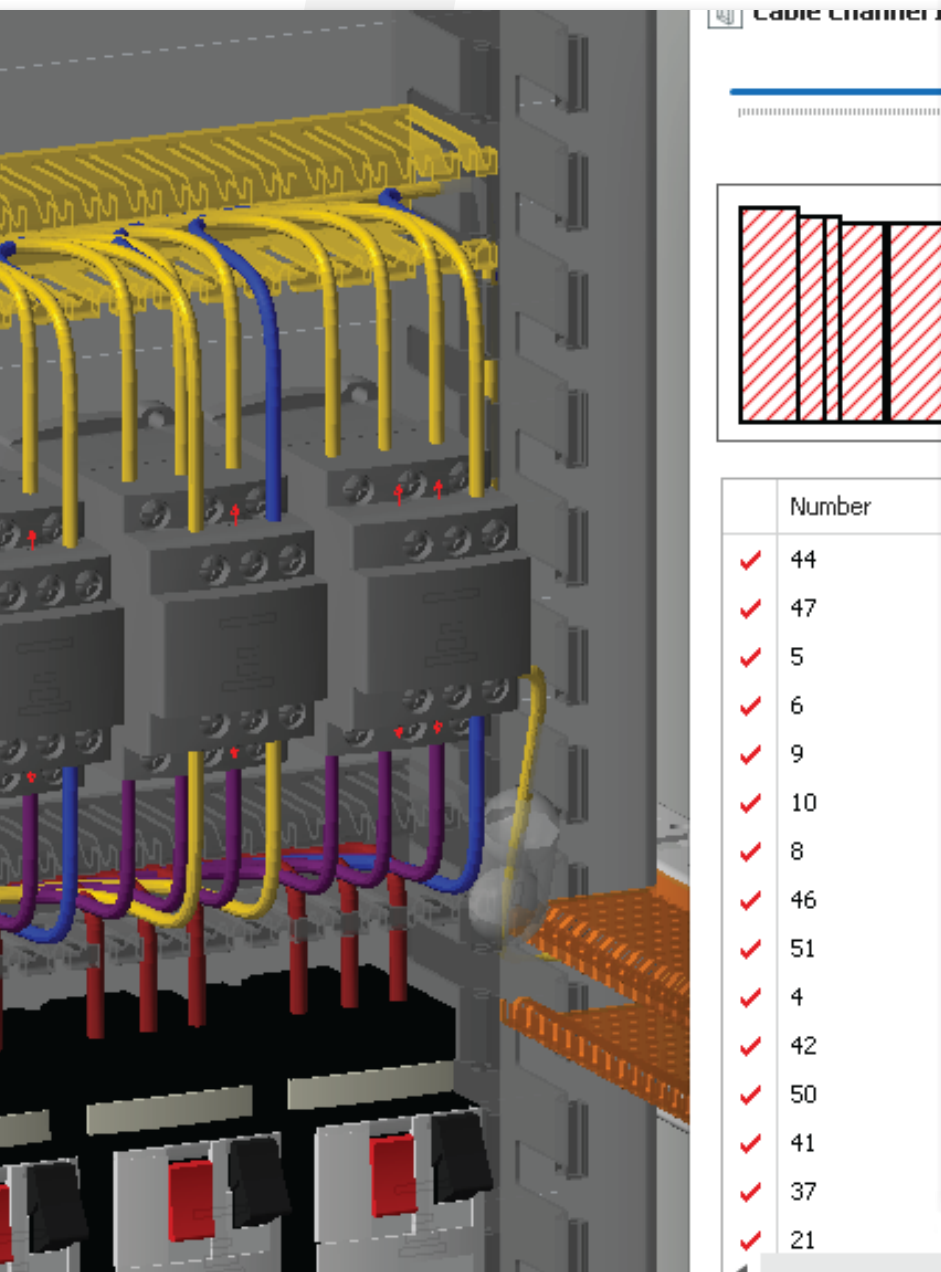
- Perform detailed schematics tasks, automate project generation, and manage options and variants of your design.

Improved Collaboration:

- Easily generate your completed documentation and seamlessly collaborate with stakeholders.



Available Add-Ons For Your Unique Needs



3D Panel Design

3D 엔지니어링 도구를 제공하여 제어 판넬, 배전반 등 3D 설계가 가능한 환경을 제공합니다.

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3D Panel Manufacturing

3D Panel Design을 포함하며, 현장 작업자를 위한 다양한 문서를 제공하며, 3D 설계 및 제조를 위한 최적의 환경을 제공합니다.

(Launch, Grow, Scale에서 사용 가능 & Add one or Stand-alone 선택)

Harness Manufacturing*

전개접속도(Schematic Diagrams)를 기반으로 2D 하네스를 설계하기 위한 모듈로 설계와 생산 간의 인터페이스에서 하네스를 구축하고 문서화할 수 있습니다. (Grow or Scale에서 사용 가능)

Auto-Diagram Generation

Excel/Access 데이터를 사용하여 자동으로 회로도를 생성할 수 있습니다.

Translation

프로젝트를 여러 언어로 빠르게 번역할 수 있습니다. / 영어, 독일어, 이탈리아어, 스페인어 등 (Launch, Grow, Scale에서 사용 가능)

SEE Web Catalog

1,800개 이상의 글로벌 제조사에서 제공하는 백만개 이상의 장비 데이터를 제공, 이중 3D 기호가 포함된 데이터가 81,000개이며, 최신 데이터로 신속하게 업데이트되는 온라인 카탈로그입니다. (Grow, Scale에서 사용 가능)

하네스(Harness)*

현장 배선 작업이 완료되고 하나의 하드웨어 전기 완제품을 위한 일련의 과정을 하네스라고 하며, SEE Electrical은 하네스 솔루션과 기본 솔루션을 통해서 전기도면을 2D와 3D로 표현 할 수 있습니다.

Launch

엔지니어를 위한 쉽고 효율적인 전기 설계가 가능한 CAD 소프트웨어

Key features :

- Efficient schematic editor for single and multi lines diagrams.
- Schematics management:
 - Electrical wiring
 - Control and communication wiring
 - Pneumatic & Hydraulic
 - Instrumentation P&ID
- Basic reports' generation (BOM, Device list per type, document list)
- DWG import/export
- Calculation note import from CanecoBT and EPD Ecodial
- Unlimited pages document
- Symbol and circuit reuse
- Extensive electrical symbol libraries supporting IEC, IEEE/NFPA, GOST, GB standards
- Equipment catalogue editor (commercial and basic technical data only)

Grow

Launch의 모든기능 + 상세하고 복잡한 전기설계 및 판넬 레이아웃이 가능한 전문가를 위한 CAD 소프트웨어

Launch features plus :

- Advanced engineering data management (connections, symbols' association)
- Automatic wire numbering
- Signal management (up to 5 signal type)
- Wire directions
- Cable management
- PLC management
- Reports and graphical lists:
 - Terminal Matrix
 - Cable Plan
 - Wire List
 - Wiring, PLC IO
- Equipment catalogue editor (single entry edition full data)
- Error checking
- Intelligent PDF export
- 2D Panel layout editor
- Cabinet Thermal calculation



Scale

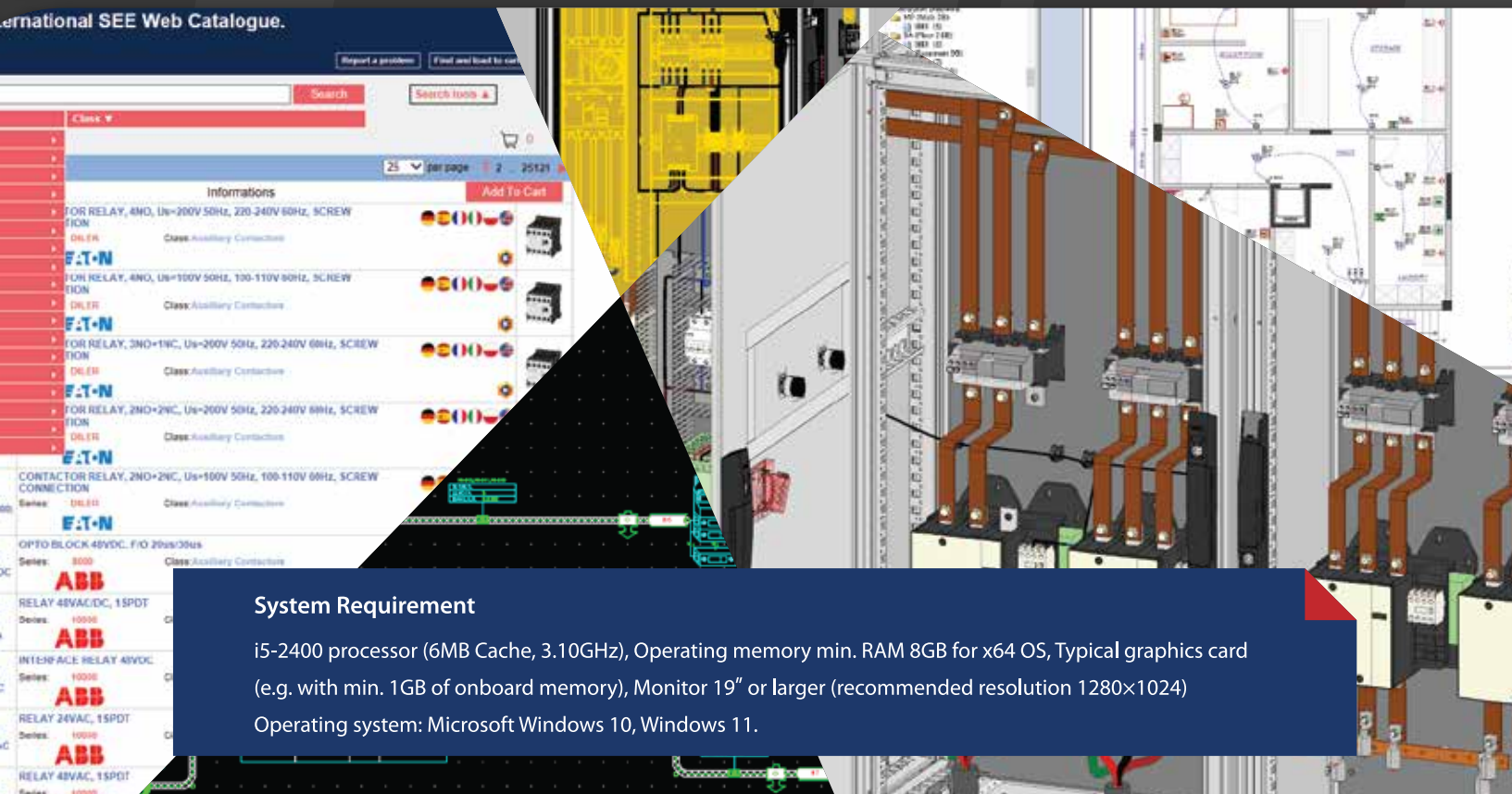
Launch 및 Grow의 모든기능 + 대규모 설계를 관리하고 효율적인 협업이 가능한 최상위 CAD 소프트웨어

Launch and Grow features plus:

- Project structure customization
- Bulk data editing
- Go To navigation
- Auto connections, orthogonal wiring, multicore symbols
- Unlimited signal management
- Aspect management (IEC 81346)
- Terminal/Cable/Connector plans
- Product Assembly, Device list reports
- SQL query/report designer
- Automatic diagram and cabinet layout generation
- Project data export/import using MS Excel
- Multi-user environment manager
- Projects comparison
- Tools for paper/DWG/DXF project conversion (IDL)

“All the Power of Electrical CAD dedicated to Industrial Automation and Electrical Harnesses.”

International SEE Web Catalogue.



System Requirement

i5-2400 processor (6MB Cache, 3.10GHz), Operating memory min. RAM 8GB for x64 OS, Typical graphics card (e.g. with min. 1GB of onboard memory), Monitor 19" or larger (recommended resolution 1280×1024)
Operating system: Microsoft Windows 10, Windows 11.

Features list _ Detail

Launch Grow Scale

- Single-line and multi-line diagram editor
- Management of electrical diagrams
- Project manager with Auto-backup feature and daily backup of the projects
- Real-time lists for: components, terminals, cables, cable cores, wires, PLC I/Os, documents
- Filtering/sorting into lists + storing the filter or sorting
- Multiple symbol libraries (including IEC, NFPA) with graphical overview, grouping and searching
- Creation of custom symbols and drawing macros
- Real-time component numbering, generation of cable names and terminal numbers, and cross referencing
- Real time referencing between contacts and coils
- Locking of component names, terminals, and wire labels
- Custom project template creation
- Selection and edition of basic physical and electrical data from the attached equipment catalogue
- Import/Export of CAD formatted data (DWG, DXF, DXB and DWF)
- CanecoBT and SE EPD Ecodial interface. Auto generation of single and multi-line schematics
- Importing of images such as JPG, BMP, PNG, TIF, GIF, PCX, PDF and others
- Copying of symbol groups between projects
- Working on multiple projects simultaneously
- Customizable working environment
- 2D CAD drawing and dimensioning capabilities
- Support for hyperlinks on graphics, exporting active project into web format
- Redlining functionality
- 512 available layers
- Symbol labelling with function and location
- Export in Enhanced Metafile Format and picture files (JPG, BMP, PNG, TIF, GIF, PCX)
- Exporting labels to various printer types
- Intelligent PDF with navigation
- Handling of multi-level terminals
- Integrated equipment database with channel definition and association of symbol connection points
- Function and location boxes
- Import of manufacturer's data into equipment database in Microsoft Excel® format
- Duplicate component name check
- Support for filtering equipment with a suitable number of auxiliary contacts for coils and components
- Contact mirror display for coils
- Management of relay contacts with catalog code control
- Automatic contact numbering of coils-and components with auxiliary contacts
- Support of automatic renumbering the contacts
- Checking coils and components for over use of auxiliary contacts
- Completing components like coils, multilevel terminals, connectors, ...
- Cable management (cable equipment database) and connector/pins management

- PLC management
 - Organize diagrams in folder structures
 - Wire directions display and editing
- User definable numbering method for all elements and references
 - Renumbering of entire terminal strips, renumbering of cables
 - Insertion of pages and deletion of pages gaps
 - Database editors (single entry editing)
- Graphical signal management with predefined signal properties /wire numbering
 - Graphical terminal plan with automatic detection of up to 20 bridge types
 - Graphical cable plan including spare cores + wiring list
 - Enable duplicate wire numbering for different sub folders
 - Management of connectors
 - Find and replace text throughout entire project
 - Insert components/terminals into the project without a graphic
 - 2D cabinet layout design synchronized with circuit diagram
- Open Data modification of all project data in Excel
 - Auto Connection for wires
 - Draw orthogonal multi-pole wires
 - Wire flow direction control (important for wire and wiring list)
 - Variant definitions for circuit macros and whole pages
 - Cross-reference navigator (go to) with marking function (come from)
 - Navigation from Database and specific Graphical lists to drawings
- Aspect manager for handling functions, locations & products, including ability to manage nested aspects
 - Configure project tree allowing for custom graphical and database lists
 - User defined lists and components
 - Configuration of multicore cables defined by a single wire
 - Changing of page templates for an entire project or a part of the project
 - Copy multiple pages and folders between projects
 - Advanced database editors (editing of several entries at once)
 - Terminal plan with graphics and terminal row picture plan
 - Cable terminal row plan
 - Connector matrix and plan
 - Product assembly list + Compressed BOM + Device list
 - Generate all necessary graphical lists in one shot
- Database list/editor with texts from callouts: usable for revision management
 - Find and replace symbols from selected, current page or entire project
 - Powerful custom report generator
- Project change report and environment manager tools for multi-user sites

SEE | ***etap***[®]



(주)서울데이타시스템

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